



Sessions, Cramer, Riley at Center

Sen. Jeff Sessions of Alabama is visiting the Marshall Center today and Rep. Bud Cramer of Alabama's Fifth Congressional District will be here on Friday. Rep. Bob Riley of Alabama's Third District is also visiting the Center this afternoon for an overview.

While at Marshall, both Sessions and Cramer will meet with Center Director Dr. Wayne Littles and senior staff for an update on center activities. In addition, Sessions will visit several Marshall facilities where major projects are under way.

As part of Cramer's visit, a reception will be held in the Building 4200 lobby to honor the congressman on his recent selection as ranking member of the House Space Subcommittee which oversees NASA. The reception, beginning at 9 a.m. Friday, is open to all employees.

Marshall-Managed Microgravity Science Lab Mission Set for April 3

Following completion of the Flight Readiness Review last week, NASA managers set April 3 as the official launch date for NASA's Microgravity Science Laboratory (MSL-1) mission.

The focus of the upcoming mission, designated STS-83, will be on NASA's efforts to further understand the subtle and complex phenomena associated with the influence of gravity in many aspects of daily life.

The Marshall Center manages the MSL-1 mission for NASA and will oversee and support the scientific activities of the mission from Spacelab Mission Operations Control in Building 4663.

The STS-83 flight agenda resembles future work set to take place aboard the International Space Station. STS-83 will be the 22nd flight of Space Shuttle Columbia and the 83rd mission flown

since the start of the Space Shuttle program in April 1981.

The crew of mission STS-83 includes: Commander Jim Halsell; Pilot Susan Still; Mission Specialists Janice Voss, Michael Gernhardt and Donald Thomas; and Payload Specialists Roger Crouch and Greg Linteris. Thomas, who suffered a broken ankle following a routine training exercise on Jan. 29, has officially been cleared to fly as planned.

"We are very pleased that Don has been cleared for flight and are confident in his ability to carry out his mission responsibilities," said David C. Leestma, director of Flight Crew Operations.

The launch window for STS-83 on April 3 opens at 1:01 p.m. CST and extends for 2 hours, 30 minutes. Columbia's mission duration is planned for 15 days, 16 hours. Columbia's landing is scheduled for April 19.

Harris Selected to Head S&MA Office

Amanda Harris has been appointed director of Marshall's Safety and Mission Assurance Office (S&MA). She had been S&MA deputy director since June of 1995.

Harris joined the Marshall Center in 1983 as a professional engineering intern assigned to the Test Surveillance Branch in the Science and Engineering Directorate. In 1989 she was appointed resident engineer for Safety, Reliability, Maintainability, and Quality Assurance where she was co-located at Martin-Marietta in Denver, Colo. She has also served as senior resident engineer for the Space Shuttle Main Engine at Rockwell International's Rocketdyne Division in Canoga Park, Calif. In September 1994, Harris became director of the Systems Safety and Reliability Office after serving as technical assistant to the director for S&MA.



Amanda Harris

Center to Open Doors on May 3

The Marshall Center will hold a free Community Open House on Saturday, May 3, to give members of the public in surrounding communities the opportunity to see and learn about the space program and Marshall's key role in it.

The event, planned from 9 a.m. to 4 p.m., will open facilities to the public and feature activities that let visitors share in NASA's past successes, observe current Marshall Center work and have a glimpse into the future of the space program.

"This will be a unique opportunity for the community," said Marshall Center Director Dr. Wayne Littles. "We're planning the event so people will have a really informative, meaningful experience, and be able to get as close as possible to the real Marshall Center."

Open House Chairman Cedreck Davis said flexibility will be one of the key ingredients that should make the event enjoyable and informative for a wide range of interests.

"Visitors will basically be able to build their own tour by walking or driving from location to location, with Center

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Testing Shows X-Ray Telescope Mirrors Give Sharp Focus

Performing beyond expectations, the high-resolution mirrors for NASA's most powerful orbiting X-ray telescope have successfully completed initial testing at the Marshall Center's X-ray Calibration Facility.

"We have the first ground test images ever generated by the telescope's mirror assembly, and they are as good as — or better than — expected," said Dr. Martin Weisskopf, Marshall's chief scientist for NASA's Advanced X-ray Astrophysics Facility (AXAF).

The mirror assembly, four pairs of precisely shaped and aligned cylindrical mirrors, will form the heart of NASA's third great observatory.

The X-ray telescope produces an image by directing incoming X-rays to detectors at a focal point some 30 feet beyond the telescope's mirrors. The greater the percentage of X-rays brought to focus and the smaller the size of the focal spot, the sharper the image.

Tests show that on orbit, the mirror assembly of the Advanced X-ray Astrophysics Facility will be able to focus approximately 70 percent of X-rays from a source to a spot less than one-half arc second in radius. The telescope's resolution is equivalent to being able to read the text of a newspaper from half a mile away.

"The telescope's focus is very clear, very sharp," said Weisskopf. "It will be able to show us details of very distant sources that we know are out there, but haven't been able to see clearly."

In comparison, previous X-ray telescopes — Einstein and Rosat — were only capable of focusing X-rays to five arc seconds. The Advanced X-ray Telescope's resolving power is ten times greater.

"Images from the new telescope will allow us to make major advances toward understanding how exploding stars create and disperse many of the elements necessary for new solar systems and for life itself," said Dr. Harvey Tananbaum, director of the Advanced X-ray Astrophysics Facility Science Center at the Smithsonian Astrophysical Observatory, in Cambridge, Mass., — responsible for the telescope's science mission.

"We will observe X-rays generated when stars are torn apart by the incredibly strong gravity around massive black holes in the centers of galaxies," added Tananbaum.

On a larger scale, the telescope will play a vital role in answering fundamental questions about the universe. "The superior quality of the mirrors will allow us to see and measure the details of hot gas clouds in clusters of galaxies, giving us a much better idea of the age and size of the universe," said Dr. Leon Van Speybroeck, Telescope Scientist at the Smithsonian Observatory.

"These same observations also will measure the amount of dark matter present, providing unique insight into one of nature's great puzzles," said Van Speybroeck.

A second phase of testing is now underway at Marshall. Calibration of the observatory's science instruments began in mid-February. "This phase of testing," said Weisskopf, "includes two focal plane instruments and two sets of gratings used to analyze images and energy distributions from cosmic sources seen by the telescope."

Working around the clock, test teams are taking measurements and studying results. "It is very exciting," said Weisskopf. "With more than 1,200 measurements taken, there is already a tremendous amount of information for study."

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STS-83 Astronauts Bob Cabana (left) and James Newman (next to him) are instructed by Steve Phillips of Boeing on the operation of a hatch for the International Space Station. The two astronauts participated in hatch qualification and life-cycle testing, which is under way at the Marshall Center.

Photo by Emmett Given

Goldin Comments on Space Program Survey

A national survey released Friday by the Council for Excellence in Government highlights the importance of space exploration to the American public, NASA Administrator Daniel Goldin said.

The survey, conducted by the research firms of Peter D. Hart and Robert M. Teeter, indicates that "promoting space exploration" is the only one of 16 tested items about which a plurality of Americans say the Federal government has been very successful.

"This survey demonstrates again the importance Americans place on exploration and discovery," Goldin said, "and their belief that one of the most impor-

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Five Propulsion Lab Engineers Named 1996 Marshall Inventors of the Year

by Nancy Robinson
Public Affairs Office

A team of engineers from the Propulsion Lab has been named the Marshall Center's Inventors of the Year for 1996 for their work in developing a device to aid those recovering from strokes and knee injuries.

Neill Myers, Michael Shadoan, John Forbes, Kevin Baker and Darron Rice are credited with inventing the Selectively Lockable Knee Brace, which is designed to provide movement of the knee during rehabilitation and to promote a quicker, less painful recuperation.

A prosthetic device might seem a far cry from the "bread and butter" line of work for engineers in a Marshall laboratory. The connection though, is that in this case mechanisms and materials already developed by the team during their work on propulsion systems were applicable to the knee brace.

Even with that advantage, there still was an intricate path to be negotiated from initial idea to achieving the final objective of a tangible working product. To help streamline the process, NASA has recently implemented a new policy

on filing patent applications as well as new provisions for sharing license income with inventors.

The Propulsion Lab team worked on the brace over the past three years. The investment of time and effort was rewarded recently with the issuance of a patent, based on the device's potential for commercial application. The brace is currently undergoing testing at Horton's Orthotic Lab in Little Rock, Ark.

This was the 13th patent for Myers, making him the "most patented" inventor currently at Marshall. His inventions span 25 years and cover a wide variety of technologies.

Summing up what involvement in the knee brace project has meant for the team, Myers said it was "extremely nice" to be able to do something that can have a direct benefit on people's lives.

The knee brace and involvement of the Propulsion Lab team are another example of how Marshall, NASA, and the government in general encourage people who display a spirit of invention.

The Inventors of the Year Award will be presented to the team at the Annual Awards Ceremony in June.

NASA Selects 1996 Invention of the Year

A patented high-temperature seal developed for the National Aerospace Plane project by Dr. Bruce M. Steinetz and Paul J. Sirocky (retired) of NASA's Lewis Research Center, Cleveland, Ohio, has won NASA's 1996 Government Invention of the Year award.

The High Temperature, Flexible, Fiber Preform Seal has been used for numerous NASA aeronautical applications since it was patented in 1992. The seal, which consists of emerging high-temperature (ceramic or superalloy) fibers braided into a flow resistant, flexible structure, has been demonstrated as an enabling technology in several key applications.

Marshall Procurement Sets 2nd Stand-Down

The second session of the Marshall Procurement Office "Acquisition Reform Stand-down" activities will be held Thursday in Building 4200, Room G-13.

The first session, held on March 17, involved procurement personnel discussing major ways of doing business on the Internet and receiving briefings on the Consolidated Contracting Initiative, including discussion of options for using other field center contracts to satisfy requirements.

Discussions on Thursday will include Performance Based Contracting, price analysis of commercial items and procuring commercial items.

The Government Acquisition Reform Stand-down is a day in which personnel involved in acquisitions pause to share new information on acquisition by using NASA Headquarters and Marshall Center personnel to discuss acquisition issues, according to Procurement Office Deputy Director Steve Beale.



Marshall Center's payload training team at the Payload Crew Training Complex has completed its last planned Joint Integrated Simulation. The simulation coordinated realtime training activities of the crew of the first Microgravity Science Laboratory mission, planned for launch April 3 with mission controllers at Johnson Space Center and with science operations controllers at Marshall. The Payload Crew Training Complex has supported payload crew training activities since 1979 and has played a key role in the success of many Spacelab missions.

Photo by Terry Leibold

Marshall Center Barbershop a Fixture Here Since 1967

by Carol Wasserman
NASA Exchange

For 34 years, employees have been able to get haircuts; shaves and beard trims at the Marshall Center. The barber shop, known as S & H Styling and Barber Shop, opened officially in October 1963. According to Ronny Saddler and Arthur Hodge, owners, many things have changed over the years, including the length of men's hair. Styles have ranged from short (crew cut/flat top) to long (shoulder length), back to shorter styles again, and the barber shop is no longer "just" a barber shop.

With the move to 4203 and additional space acquired, a third chair was added and a cosmetologist/stylist brought in to expand services and to encourage more women customers by offering perms, color, highlighting, etc. According to Saddler, they adapt to the times and have expertise in all areas of cutting and styling for both men and women.

For 33 of their 36 years as barbers, Saddler and Hodge have been clipping, cutting, styling and honing their craft at the Center. Ashley Hodge, Arthur's son, has four years of cosmetology/styling experience with three of those years at Marshall.

Most of the Center Directors have patronized the shop over the years and, according to Saddler and Hodge, they have been fortunate to meet Walt Disney, President Bush and Lady Bird Johnson, along with Senators, officials from other Centers, and visiting dignitaries from other countries.



Decades of experience: Ashley Hodge, left, Ron Saddler and Arthur Hodge (far right) offer their skilled services at Marshall Barbershop. Photo by Dennis Olive

The most unforgettable experience for Saddler was the first week he worked. Dr. von Braun, the center director at that time, came in on Friday for a haircut and Saddler remembers being so nervous, he only trimmed a little from the sides and back. The following Monday, his secretary called to make an appointment with Hodge for a "real" haircut. Fortunately, von Braun continued to support the shop.

All Marshall employees, retirees and on-site contractors are invited to take advantage of this service by calling 881-7932 for an appointment or visiting the shop in building 4203, room 1108.

Emergency Ops Officer Clarifies Severe Weather Warning Policy

by Joyce Davis
Emergency Preparedness Officer

During the severe weather on March 5, there was some confusion regarding the Tornado Warning announcement.

The Emergency Operations Center (EOC) monitors the weather channel and all three local television channels, plus the National Warning Service speaker phone, HAM radio reports, and our EOC radio channel. As severe weather nears the Alabama border, continuous assessments are made from all information as to when the weather will reach Marshall and how severe it will be. Appropriate announcements are then made over the Emergency Warning System.

There are different criteria and employee actions required for the various announcements. Consideration is given

to the severity of the weather and the location of the weather front in determining which announcement to make. All announcements by the National Weather Service that concern Madison County are announced by the Emergency Management Director followed by specific instructions for employee actions. For example, if the severe weather is in north Madison County as it was on March 5, there will be very little impact to Marshall and therefore, an evacuation notice was not made.

The EOC utilizes three different announcements for severe weather:

- If the severe weather is in Madison County but not in close proximity to Marshall, there will be no evacuation instructions with this announcement.
- If the severe weather is in Madison

County and could contain strong winds at Marshall, instructions for employees in trailers and buildings without protective areas are provided for evacuation.

- If the severe weather is in Madison County and in close proximity to the Center, evacuation instructions for all employees are provided.

It is very important for employees to listen to the complete announcement before taking action.

The goal of the EOC staff is to provide a safe environment for all employees. Therefore, we are asking for your cooperation and support in an attempt to facilitate appropriate actions during emergency situations.

It is extremely important that employees keep the noise level down while in protective areas so that EWS instructions can be heard.

X-ray Mirrors

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The calibration process will end around late April. The mirror assembly then will be shipped to TRW Space and Electronics Group, Redondo Beach, Calif. — NASA's prime contractor for the program — for integration into the spacecraft. The science instruments will remain at Marshall for several more weeks of testing before being shipped to Ball Aerospace and Technologies Corporation in Boulder, Colo., where they will be integrated into the science instrument module before being shipped to TRW.

The Advanced X-ray Astrophysics Facility is scheduled for launch in August 1998 and will join NASA's Hubble Space Telescope and Compton Gamma-ray Observatory in exploring the universe.

Marshall manages development of the observatory for the Office of Space Science, NASA Headquarters, Washington, D.C. Using glass purchased from Schott Glaswerke, Mainz, Germany, the telescope's mirrors were built by Hughes Danbury Optical Systems, Danbury, Conn. The mirrors were coated by Optical Coating Laboratory, Inc., Santa Rosa, Calif.; and assembled by Eastman-Kodak Company, Rochester, N.Y.

Goldin Comments

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tant roles of the Federal government is to help push back the boundaries of knowledge. NASA is not only a crucial investment in our national future — it is also a tangible symbol to the American people of the greatness to which we aspire.

"We are gratified to learn from this survey that NASA has been successful in meeting the needs of the American public," Goldin said.

For more information, contact the Council for Excellence in Government at 202/728-0418.

Hardware Simulation Lab Event Set

To celebrate the 20th anniversary of the Hardware Simulation Laboratory and 20 years of support to the Space Shuttle Main Engine program, there will be an Open House and a Fish Fry/BBQ chicken cookout catered by Bubba's on April 4 at the Rustic Lodge on the banks of the Tennessee River. Dinner cost is \$10 per person. Deadline for reservations and purchase of meal tickets is March 28. Contact Janet Wilkes at 4-3891.



Participants of the Solar Thermal Propulsion Workshop held last week at the Marshall Center observe a full-scale mockup of the Shooting Star experiment. The mock-up is an inflatable torus that supports a three-mil thick thin film fresnel lens. The spartan bus which houses the solar thermal engine and the secondary concentrator (located in the back) has all the avionics and housekeeping systems.

Photo by Terry Leibold

Help Committee 'Spot an Environmentalist'

Employees are invited to help members of the Marshall Recycling Committee "Spot an Environmentalist." Until April 11, if anyone should see a Marshall employee or on-site contractor doing environmentally friendly acts, like participating in a car pool, picking up trash, saving energy, etc., contact Ted Ellett (4-4778, Ted.Ellett@msfc.nasa.gov) or Shirley Wright (4-4770, Shirley.W.Wright@msfc.nasa.gov) with

the names, mail codes, and telephone numbers of the environmentalists you spot, along with a brief description of their act. Up to 10 people will receive \$20 gift certificates to Wild Birds Unlimited.

The winners will receive their awards at the Earth Day tree planting ceremony at Building 4752 on Tuesday, April 22. The Recycling Committee's WWW address is <http://zaphod.msfc.nasa.gov/~httpser/recycle/rec.html>.

Marshall Center Open House

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representatives on hand at each point to answer questions and provide information," he explained.

Options for visitors to see will include a variety of facilities including the NASA Communications Center, Space Sciences Laboratory, Wind Tunnel test facility, Neutral Buoyancy Simulator, the Astrophysics X-ray Assembly Facility, Astrionics Laboratory, the Payload Crew Training Complex, Spacelab Mission Operations Control, Huntsville Operations Support Center and the East and West Test Areas.

There is no admission charge. Souvenirs and refreshments, along with a variety of entertainment, will be available during the Open House to add to a day designed to show appreciation to the public for many years of support.

Employee Ads

Miscellaneous

- ★ Computer, Cyrix P6X86-120, mid-tower case, 730MB HD, 2MB video, Ensoniq sound, 16MB RAM, \$775. 353-9514
- ★ 231 Massey Ferguson tractor; 6' Pittsburgh bushhog; and 20' Gooseneck trailer. 615-433-0369
- ★ Miter saw 9" Black and Decker \$40. 420-2444
- ★ Haugh's Canadian woodstove \$200; GE Microwave, almond \$150; GE window air conditioner \$350. 882-1904
- ★ Daylilies for spring planting 25 fans for \$20. 615-433-2401
- ★ 12 ft. fiberglass boat, V-hull trailer, oars, old 5hp., Johnson motor \$435. 233-3773
- ★ Tiller, 5hp. chain drive, with plow attachment, heavy duty \$150. 534-8186
- ★ Super single waterbed complete, heater \$75; freezer \$100; bread machine \$45. 650-5375
- ★ John Deere lawn tractor model 212, 12hp. 47" deck, 30" tiller attachment \$2,000. 420-2444
- ★ Sofa, cocktail, and end tables, solid maple with burl inlay. Walnut finish \$600. 895-9520
- ★ Savage bolt action, ladies/youth model 1, 243 cal. \$275, browning A500R shotgun w/slug barrel \$475. 830-4846
- ★ Classic leather: Sofa, chair, loveseat, ottoman. Will sell at 50% discount of retail value. 881-5973
- ★ Computer desk \$50; Smith-Corona portable typewriter \$15; typist chair \$20. 534-0939
- ★ Two cemetery plots with vaults, Huntsville Memory Gardens \$3,500. 534-0939
- ★ 30 gallon saltwater fish tank with all accessories, stand & fish \$195. 828-6117
- ★ Toshiba Laptop 28.8 modem, 24MB RAM, 810HD, 11.3 Active TFT, screen under warranty \$2,300 o.b.o. 430-4074
- ★ Sunmountain orbit ultra-lightweight golf carry bag, Two caddy dividers and graphite protection \$55. 461-9101
- ★ Microwave Sharp Carousel, 700W, 1.5 cu. ft., \$75; self-amplified speakers, Fisher, 30Wx2, \$45. 830-2347
- ★ Evening dresses suitable for proms; variety of colors, styles, sizes 6-8, some matching shoes. 881-4022
- ★ Nordic Track Pro model ski exerciser \$645 new, selling for \$25 o.b.o. 586-5831
- ★ Yamaha PSR-82 keyboard with bench and stand 61 keys. Great for beginner \$100. 830-9464
- ★ Ford tractor 3 cyl. diesel, 4-wd, turf tires, plus woods mower & 6' blade \$8,995. 615-433-2401

- ★ Large dining room table. solid "real" wood, heavy \$40. 534-4968
- ★ Triple dresser \$125; king size waterbed \$100. 852-4602
- ★ Kenwood car audio self powered subwoofer. 60 watt built-in amp \$100. 461-9101
- ★ 1990 Chev Silverado ext-cab, 2-WD, 350 auto, 1994 wheels \$9,995. 536-5207

Vehicles

- ★ 1990 Buick Riviera, ruby red, CD player, 79K miles \$7,500. 881-2601
- ★ 1991 Nissan Pathfinder XE, 5-speed, 4-door CD player, 85K miles \$10,400. 882-3197
- ★ 1988 Mazda B2200, 114K miles \$1,988. 881-4440
- ★ 280ZX Turbo 83 in 600D shape \$1,800. 539-3903
- ★ 1983 Lincoln mark VI \$1,000. 539-2059
- ★ 1984 Yamaha Virago 1000, Harley look-a-like, 9000 miles \$1,995 o.b.o. 851-2929
- ★ 1987 thru 1996 Corvette glass T-top \$550 o.b.o. 615-433-2401
- ★ 1985 Oldsmobile Firenza wagon 1.8 LTR, automatic 27 m.p.g., muffler, timing belt, new tires \$1,350 o.b.o. 753-2278
- ★ 1994 Buick Park Avenue, ultra, white, leather, memory seats, powered sunroof, etc., 852-6952
- ★ 1991 Mazda RX-7 coupe, adult owned, dealer serviced low miles, power sunroof, security alloys. 881-0645
- ★ 1993 Nissan 240SX, 44K miles, sunroof, 5-speed, white all options \$8,900 o.b.o. 586-7378
- ★ 1992 Saturn Sport Coupe, 28K miles \$9,500. 539-7597
- ★ 1986 Grand Prix Pontiac \$2,395. 852-4602

Wanted

- ★ Small lazy boy recliner. 881-1981

Center Announcements

- ✍ **Management Operations Office (MOO)** — MOO retirees will meet for breakfast/lunch on March 27 (4th Thursday each month) at the Cracker Barrel in Madison at 10 a.m. In addition to retirees, all present or former MOO employees are welcome. Call 539-0042 if there are any questions.
- ✍ **Procurement Office** — The Procurement Office retirees will meet for breakfast April 1, 9 a.m. at Shoney's Haysland Square. Call Carl Melton, 837-5604 for more information.
- ✍ **EM Retirees** — The EM Retirees meet every 1st Tuesday. The next meeting will be April 2, 8 a.m. at Mullins Drive-in, Andrew Jackson-Way. Call 544-6716 for more information.
- ✍ **Toastmasters** — Redstone Toastmasters

International will meet every Tuesday at 6 p.m. in the Morrison's Cafeteria in Madison Square Mall. For more information call 461-0476.

- ✍ **Spring Dinner Dance** — Tickets for the April 12 Ballroom Dance are now on sale by the MARS Ballroom Dance Club. The semi-formal event will be held in the VBC West Hall and will feature ballroom music by the Barry Orth Combo. Socializing will begin at 6:30 p.m., buffet dinner will be served at 7 p.m., followed by dancing from 8 to 11:30 p.m. Tickets are \$18 per person with a \$3 discount for members; they can be purchased from Tamara Landers (4-6818), Pat Sage (4-5427), Ed Ogozalek (837-1486), and Bob Williams (4-3998). Reservations for a table of 8 can be made by calling Woody Bombara (650-0200).
- ✍ **MARS** — The MARS fishing club held its second tournament of the year at Decatur Boat Harbor on Saturday March 15. First place went to Charles Cothran and Ross Evans with five fish for 7.65 lb. Second place went to Charles Nola and John Harbison with five fish for 7.23 lb. Third place went to Charles Kilgore with 2 fish for 4.1 lb. Kilgore weighed in with the big fish at 2.95 lb. The next club tournament will be a crappie tournament at Browns Creek on April 5. For more information call Don McQueen at 544-9073 or Ross Evans at 961-2305
- ✍ **Toastmasters International** — Toastmasters International will have a lunch meeting each Tuesday from 11:30 a.m. to 12:30 p.m. in Building 4610 cafeteria conference room.
- ✍ **College Scholarships** — The NASA Scholarship Fund and the Marshall Management Association (MMA) are accepting college scholarship applications for children of Marshall employees. NASA applications are due March 31, available in Bldg. 4200, Room 206, or from the Exchange Office in Bldg. 4752. MMA applications are due April 15, available in Bldg. 4250, Room 31, NASA will award five \$2,000 scholarships and the MMA will award two \$1,500 scholarships.

Job Opportunities

CPP 97-13-CP, AST Basic Properties of Materials, GS-1310-14, S&E, Space Sciences Lab, Micro-gravity Science & Applications Div., Biophysics Br. Closes April 14.

CPP 97-14-CP, AST, Basic Properties of Materials, GS-1310-15, S&E, Space Sciences Lab, Micro-gravity Science & Applications Div., Biophysics Br. Closes April 14.

CPP 97-10-JB, Secretary (OA), GS-318-7, Space Shuttle Projects Office, Solid Rocket Booster Project. Closes March 27.

MARSHALL STAR

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